Material Safety Data Sheet

ACCUGLASS® 103 As, 203 As SPIN-ON GLASS

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ACCUGLASS® 103As, 203As Spin-On Glass

OTHER/GENERIC NAMES: Silicate Polymer in Alcohol / Acetone solvent.

PRODUCT USE: Planarization coating, smoothing layer, and / or dielectric material for integrated circuit manufacture

MANUFACTURER: Honeywell International
3500 Garrett Drive
Santa Clara, California 95054

FOR MORE INFORMATION CALL:
(Monday-Friday, 8:00am-5:00pm, PST)
Product Safety Department
408-962-2300

IN CASE OF EMERGENCY CALL:
CHEMTREC®
(24 Hours / Day, 7 Days / Week)
800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Silicate Polymer	26352-16-9*XU	4-10
2-Propanol	67-63-0	30-55
Acetone	67-64-1	20-35
Ethanol	64-17-5	15-30
Water	None	Remainder

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: A clear volatile flammable liquid. Has alcohol/ketone like odor. Liquid can cause irritation to human tissues. Do not get on skin, eyes, or clothing and do not breathe in vapors. Honeywell International has not investigated the complete physical and toxicological properties of this mixture, so all exposure should be avoided. This material should be handled by technically qualified individuals.

POTENTIAL HEALTH HAZARDS

SKIN: Material may be readily absorbed through skin to produce toxic effects similar to those described for inhalation. Repeated or extended contact may cause erythma (reddening of skin) or dermatitis, resulting from a defatting action on tissue.

EYES: Vapor may irritate slightly. Direct liquid contact causes intense stinging and burning sensations, and can result in inflammation and transient corneal opacity (based on alcohol content).

INHALATION: Vapors, when inhaled, can irritate eyes, nose and throat. Greater exposure can produce headache and incoordination; gross overexposure may result in respiratory depression and adverse (narcotic) effect on central nervous system.

INGESTION: May irritate or burn digestive tract, resulting in severe nausea, vomiting and abdominal pain. However, overall toxicity is estimated to be moderate to low, based on toxicity of individual components. Possible liver and kidney injury may result. Aspiration into lungs may occur during ingestion or vomiting, resulting in lung damage.

DELAYED EFFECTS: None known.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT NAME	NTP STATUS	IARC STATUS	OSHA LIST
No ingredients listed in this section			

4. FIRST AID MEASURES

SKIN: Promptly wash with plenty of soap and water; then flush with water until all chemical is removed. Remove contaminated clothing and wash before reuse.

EYES: Immediately flush eyes with plenty of water, continuing for at least 15 minutes. If irritation persists, get medical attention and evaluation.

INHALATION: Remove promptly to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen, provided a qualified operator is available. Call a physician.

INGESTION: Do not induce vomiting. Seek immediate medical attention.

ADVICE TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: 76-77°F
FLASH POINT METHOD: Closed cup
AUTOIGNITION TEMPERATURE: Not determined
UPPER FLAME LIMIT (volume % in air): Not determined

LOWER FLAME LIMIT (volume % in air): Not determined
FLAME PROPAGATION RATE (solids): Not determined
OSHA FLAMMABILITY CLASS: 1B Flammable Liquid

EXTINGUISHING MEDIA:
Dry chemical, carbon dioxide or "alcohol type" foam can be used. Water spray, gently applied can also be used as an extinguishing agent.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Vapors will ignite when they reach a source of ignition and are within the flammable range. Avoid using solid hose streams which may cause frothing. Water spray can be used for fire fighting and should be gently applied. Large amounts of water may be useful in diluting spilled materials to the point where they become non-flammable.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:
Firefighters should wear self-contained, NIOSH-approved breathing apparatus and full protective clothing. Use water spray to keep fire-exposed containers cool and to reduce vapor concentrations. After fire, flush area with water to prevent re-ignition.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)
Remove all ignition sources. Provide personal protection and ventilation. Soak up spill with inert material, such as vermiculite, and collect in covered glass or steel container.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)
Avoid skin or eye contact; do not get on clothing. Do not breathe product vapor or mist. Keep away from sparks or open flame. Keep container closed and use with adequate ventilation.

STORAGE RECOMMENDATIONS:
Store in a well-ventilated area, out of sun and away from heat and ignition sources. Remove closures carefully to relieve possible internal pressure. Keep upright and protect from damage. Refrigerate to prolong material shelf-life.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
Use in well exhausted areas. Handling should be preferably carried out in a closed system (e.g., exhaust hood). System should be of explosion-proof construction. Electrical equipment should meet requirements for Class I Group D (National Electrical Code NFPA 70).

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:
For handling in closed ventilation system wear protective gloves and apron (preferred material: butyl rubber). For leak or spills or other emergency situations, use full protective clothing, including boots. Remove immediately any wet contaminated clothing because of flammability hazard.

EYE PROTECTION:
For handling in closed ventilation system recommended above, wear safety glasses with non-perforated side shields. For leak or spill or other emergency use chemical safety goggles and face shield.

RESPIRATORY PROTECTION:
None required if handled in closed ventilation system recommended above. For spill, leak or other emergency where mist or vapor is concentrated, use a self-contained breathing apparatus or air-supplied respirator, NIOSH-approved. For lower concentrations, use a cartridge respirator with an organic vapor cartridge, also NIOSH-approved.

ADDITIONAL RECOMMENDATIONS:
Provide eyewash stations and quick-drench shower facilities.

EXPOSURE GUIDELINES: **(Guidelines exist for the following ingredients)**

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Ethyl Alcohol	1000 ppm (TWA)	1000 ppm (TWA)	None
Isopropanol	400 ppm (TWA) 500 ppm (STEL)	400 ppm (TWA)	None
Acetone	750 ppm (STEL) 500 ppm (TWA)	1000 ppm (TWA)	None

* = Limit established by Honeywell for internal use.
** = Workplace Environmental Exposure Level (AIHA).
*** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:
Unknown.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear
PHYSICAL STATE: Liquid
ODOR: Alcohol/ketone like odor
SPECIFIC GRAVITY (water = 1.0): 0.8 - 0.9
SOLUBILITY IN WATER (weight %): (solvent components) > 88%
pH: Not determined
BOILING POINT: Not Determined
MELTING POINT: Not determined
VAPOR PRESSURE: Not determined
VAPOR DENSITY (air = 1.0): Not determined

EVAPORATION RATE: Less than 1 **COMPARED TO:** Ether

% VOLATILES: Approx. 96-90%
FLASH POINT: 76-77°F
(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):
Stable under ordinary conditions of use and storage.

INCOMPATIBILITIES:
Reacts with strong oxidants, including halogens, alkalies. Active metals will react with alcohol solvent. Heating to high temperature in presence of high caustic concentration.

HAZARDOUS DECOMPOSITION PRODUCTS:
Combustion products would include carbon monoxide, carbon dioxide and oxides of silicon.

HAZARDOUS POLYMERIZATION:
Will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

Acetone:
Rat: LD50-Route: Intravenous; DOSE: 5500mg/kg
LD50-Route: Oral; DOSE: 5800mg/kg
Mouse: LD50-Route: Intraperitoneal; DOSE: 1297mg/kg
LD50-Route: Oral; DOSE: 3gm/kg
Rabbit: LD50-Route: Oral; DOSE: 5340mg/kg

Ethyl Alcohol:
Rat: LC50-Route: Inhalation; DOSE: 20000ppm/10H
LD50-Route: Intraperitoneal; DOSE: 3600ug/kg
LD50-Route: Oral; DOSE: 7060mg/kg
Mouse: LC50-Route: Inhalation; DOSE: 39gm/m3/4H
LD50-Route: Intraperitoneal; DOSE: 528mg/kg
LD50-Route: Oral; DOSE: 3450mg/kg
Rabbit: LD50-Route: Intraperitoneal; DOSE: 963mg/kg
LD50-Route: Oral; DOSE: 6300mg/kg

Isopropanol:
Rat: LC50-Route: Inhalation; Dose: 16000ppm/8H
LD50-Route: Intraperitoneal; Dose: 2735mg/kg
LD50-Route: Oral; Dose: 5045mg/kg
Mouse: LD50-Route: Intraperitoneal; Dose: 4477mg/kg
LD50-Route: Oral; Dose: 3600mg/kg
Rabbit: LD50-Route: Intraperitoneal; Dose: 667mg/kg
LD50-Route: Oral; Dose: 6410mg/kg
LD50-Route: Skin; Dose: 12800mg/kg

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:
None available.

OTHER DATA:
The toxicological properties have not thoroughly been investigated.

12. ECOLOGICAL INFORMATION

The solvents are biodegradable; the polymer is probably not biodegradable.

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? YES
If yes, the RCRA ID number is: D001

OTHER DISPOSAL CONSIDERATIONS:
Disposal of this material may be subject to federal, state and local regulations. Users should review their operations in terms of applicable federal, state and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste material. Incineration of waste material in an EPA-approved facility is recommended, allowing a solid, inert residue to form.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT HAZARD CLASS: Flammable Liquid

US DOT ID NUMBER: UN1993

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: All ingredients contained in this product are on the TSCA master inventory.

OTHER TSCA ISSUES: None.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and / or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

INGREDIENT NAME	SARA/CERCLA RQ (lb)	SARA EHS TPQ (lb)
Acetone	5000	None

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate. Fire.

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME	COMMENT
Acetone	None
Isopropanol	None

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME	WEIGHT %	COMMENT
Acetone	13-23	FL,LA,MA,NJ,RI
Isopropanol	32-42	FL,LA,MA,NJ,PA,RI
Ethanol	19-29	FL,IL,MA,NJ,PA,RI

ADDITIONAL REGULATORY INFORMATION:
Unknown.

WHMIS CLASSIFICATION (CANADA):
Unknown.

FOREIGN INVENTORY STATUS:
Uunknown.

16. OTHER INFORMATION

CURRENT ISSUE DATE: September 6, 2001
PREVIOUS ISSUE DATE: January 1, 1991

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:
Update the toxicological information and flashpoint data.

OTHER INFORMATION: For laboratory or manufacturing use. Not for food or drug use. Do not store with foodstuffs.